

R E P O R T

OF THE

ACTING SUPERINTENDENT

OF THE

YELLOWSTONE NATIONAL PARK

TO THE

SECRETARY OF THE INTERIOR.

1897.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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YELLOWSTONE NATIONAL PARK,
OFFICE OF THE SUPERINTENDENT,
Mammoth Hot Springs, Wyo., August 31, 1897.

SIR: I have the honor to submit the following report of the condition of affairs and of the management of the Yellowstone National Park for the period from June 23 to August 30, 1897.

The letter of instructions from the Department, dated June 17, 1897, authorizing me to assume charge of the Yellowstone National Park as its acting superintendent, was received by me on June 22, and my administration of affairs commenced on June 23.

The two troops of the Fourth Cavalry that marched from Fort Walla Walla, Wash., on May 20, en route to relieve the two troops of the Sixth Cavalry in the park, did not arrive within the park boundary until June 26. On the 27th they arrived at the lower or Fountain Geyser Basin. Accompanied by my predecessor, Capt. George S. Anderson, Sixth Cavalry, I met the squadron, Fourth Cavalry, on June 27 in the lower Geyser Basin, caused copies of the rules, regulations, and orders to be read and distributed to the officers and men, and gave orders for the proper instructions and posting of detachments to relieve without delay the outpost detachments of the Sixth Cavalry. On July 6 the last outpost detachment of the Sixth Cavalry arrived at Fort Yellowstone from Snake River, and July 8 Captain Anderson, with his squadron, Sixth Cavalry, marched from Fort Yellowstone, en route to Fort Robinson, Nebr.

After my arrival in the park and while awaiting my letter of instructions from the Department my time was occupied in inspecting the outstations, routes of travel, roads, and bridges in the park, and gathering information of the winter and summer habitats of game, numbers of the different species, etc. In the meantime the work of opening the roads for travel progressed under the direction of Captain Anderson, and on June 1 the main route of travel from the north boundary, commencing at Gardiner, going via Mammoth Hot Springs through Golden Gate to Norris Geyser Basin, thence via the Fountain, Upper Geyser Basin, the Thumb, Lake, and Canyon back to Norris Geyser Basin, was open for tourists; also the road from west boundary. The road from the south boundary up Snake River was not open until the latter part of June for wagon transportation.

After commencement of the fiscal year three crews were organized, and the work of repairing roads already opened was prosecuted vigorously. Assistant Engineer Fowble with a small crew continued the work of determining the altitudes at each milepost. All of this was continued to completion under my general direction, and the crews were put to work on the new roads. Seven new bridges have been built, as follows: Over Trout Creek; over Firehole River, at Riverside Geyser; over ravine near west thumb of lake; over Gibbon River, in Virginia Meadows; over Green Creek; footbridge over Firehole River, near Biscuit Basin, and over East Gardiner above the Undine Falls for new road leading from Mammoth Hot Springs to Cooke City; a new bridge is in process of construction over Middle Gardiner on same road. Nine bridges have been repaired, 55 new culverts have been built—some to replace old ones—and 10 have been repaired. Detailed reports are made of this work from time to time to the Quartermaster-General of the Army, and detailed estimates of cost for next year's work are now being prepared and will be forwarded to the Quartermaster-General when completed.

These estimates will embrace the cost of completing, in a substantial manner, the road down the canyons of Lewis and Snake rivers from Thumb Station to the southern boundary of the timber reserve near Jackson's Lake; the road from Mammoth Hot Springs to Cooke City, including combination bridges over Yellowstone and Lamar rivers; projected road from commencement of Grand Canyon, near Canyon Hotel, to Yancey's; Riverside Station to west boundary; for substantial stone or wooden guards on all completed roads at dangerous places (bruks of precipices, etc.); saddle trails to various points of interest; employment of four expert mountaineers, hunters and trappers, as scouts and gamekeepers; annual repairs to roads and bridges, etc.; in all about \$250,000.

During the month of July the main roads were in excellent condition, but the unprecedented travel and absence of rain caused those portions of the road made over geyserite to pulverize and break into ugly chuck holes that could not be seen for the dust, causing frequent discomfort to travelers. The remedy for this will be a heavy top dressing of gravel, which will be applied after the close of travel, provided there remains a sufficient balance of the appropriation that may be applied to this purpose.

TRAVEL.

The aggregate number of tourists visiting the park from opening of season (June 1) to August 20 was 8,720. The aggregate number carried through the park over the regular route, by the Yellowstone National Park Transportation Company, was 3,842; those carried by C. J. Bassett, via Beaver Canyon, 59; and by David A. Curry, over the same route, 43; aggregate number carried through by licensed transportation of personally conducted camping parties, 1,255; the aggregate number carried through in private transportation, 3,327; bicyclers, foot travelers, etc., 194. The number of persons taking the trip on Yellowstone Lake who came into the park by the regular transportation company was 1,667; the number of persons taking this trip who went through the park with camping parties was 922.

During the very heavy travel it became necessary to station guards at frequent intervals on the roads to prevent accident and imposition and preserve good order. It was impossible, with such great fields of camps, always to fix the responsibility of unclean camps and unextin-

guished fires on the proper parties. In order to prevent undue monopoly of the choicest camping places, parties were not permitted to camp longer than two days in one place. The campers became so numerous between Gardiner and Mammoth Hot Springs that I was obliged to prohibit camping or grazing of stock in that section after August 1, in order to preserve the grass for the antelope and mountain sheep which winter there. Thoughtless or intentional violations of the rules and regulations and instructions to tourists were very few in comparison to the number of visitors. The foolish desire to write names in conspicuous places, so far as may be judged by manifestations during the season, seems to be limited to the class of campers whose opportunity for education has been very limited or neglected; no cases of violation or trespass by passengers of the regular transportation company have been reported, the result, no doubt, of careful drivers and guides from the hotels. The presence of a United States commissioner in the park and the speedy trial of a trespasser has a wholesome and deterrent effect. A statement of the cases brought before the commissioner is appended (Appendix A).

LEASES.

No violation of stipulations in any lease has come to my knowledge. On July 30 Mrs. Jennie H. Ash forwarded through this office \$30, in payment of rent for year ending August 7, 1898, on lease dated August 7, 1895; no other rentals have been paid through this office. Upon inquiry it is learned that all other rentals due on leases have been paid direct to the Department in Washington.

During the present season Mr. F. Jay Haynes has erected a log-cabin studio in the Upper Geyser Basin, on ground leased April 18, 1896. This cabin is the most beautiful and most appropriate in the park. The logs for side walls were sawed from native live pine on three sides: the fourth or outer side of each log was peeled and shaped with drawknife. After being placed they are held in contact and shape with hardwood maple pins. The inside is finished with Wise basswood, and floored with Oregon pine, oiled. The roof is made of Washington cedar shingles, $4\frac{1}{2}$ inches to the weather. Size of building, 24 by 50 feet, with addition 16 by 16 feet—one story, with 10-foot walls; a shingled porch 10 feet wide along entire east front. The cabin is rustic in appearance throughout.

A two-story frame building, 20 by 30 feet, has been erected by Mr. H. E. Klamer on a site surveyed and platted in Upper Geyser Basin, under a lease to be issued by the Department, but which has not as yet been received. These buildings were commenced under the administration of my predecessor.

The old structures used for dairy purposes, a mile distant in the hills above the Mammoth Hotel and in close proximity to the source of water supply for the hotel, were torn down and the débris burned as a sanitary measure. Dairy conveniences were constructed in Swan Lake Flat, 4 miles distant and out of sight from road, where grass is plentiful, drainage safe, and where snow lies too deep for game to feed in winter.

A statement of the leases now held in the park is hereto appended (Appendix B).

HOTELS.

A thorough inspection of all the hotels and lunch stations was made in June. The conditions as to cleanliness, neatness, and good order were excellent. Mr. J. H. Dean, the president, general manager, and

superintendent of all hotels and lunch stations, seems in every way thoroughly equipped for his duties and, to my observation, is unexceptionally polite, gentlemanly, and obliging to all patrons. He has good and capable managers at all hotels and makes frequent and thorough inspections during the period of travel. The food is of excellent quality, well cooked and well served, the table linen unexceptionable, and the tables decorated with beautiful wild flowers in their season. The heavy outlay required by this association in order to be prepared for any and all contingencies may be inferred from the subjoined record. (Appendix C.)

REGULAR PARK TRANSPORTATION.

A thorough inspection of the coaches, surreys, stables, harness rooms, repair and paint shops, was made at the beginning of the season and everything was found to be in excellent condition, employees well organized, work systematized, and to all appearances a thorough discipline maintained. At the date of this first inspection I found present, ready for business, 1 superintendent of stages, 1 foreman of stables, 1 railroad trainman, 1 agent for each hotel in the park, 3 blacksmiths, 1 wagon maker (for repairing), 1 painter, 1 washer, 8 stable men, 2 day herders, 1 night herder, 2 six-horse Concord coaches, 31 four-horse Concord coaches, 4 two-horse surreys, 37 drivers, and 144 well-groomed horses. During the month of July another inspection was made, and I found in service 83 regular drivers, 155 temporarily employed drivers, 2 six horse coaches, 83 four-horse coaches and spring wagons, 53 two-horse surreys and spring wagons, 22 four-horse and 78 two-horse vehicles in temporary employ, 282 regular team horses, and 412 employed team horses. This does not include extra teams at park stations, nor teams for baggage, for driving to the formations, freighting, etc.

I have always found Mr. S. S. Huntley and his assistants efficient, polite, and obliging. Mr. Huntley is the best manager and handler of coach transportation it has ever been my pleasure to observe. The passenger plant of this company comprises:

	Num- ber.	Seating capacity.	
		Each.	Total.
Coaches	2	20	40
Do.....	30	11	330
Do.....	22	8	176
Surreys	17	3	51
Mountain wagons.....	10	5	50
Spring wagons.....	5	5	25
Wagonettes	3	10	30
Buckboard surreys.....	1	10	10
Do.....	1	9	9
Do.....	1	5	5
Do.....	1	3	3
Total seating capacity.....			729

Total number of horses..... 557

The Lake Boat Company transacted business, so far as my observation extended, in a satisfactory manner. I made several trips on the boat during the season—one in a severe windstorm—and the boat showed herself to be a staunch craft; every portion appeared neat and clean, the employees respectful, and the master, Mr. E. C. Waters, polite, courteous, and obliging. The boat carried of all classes 2,589 passengers on the regular trips, besides many excursion parties of which I have no record.

PROTECTION.

The troops placed under my command for protecting the park were strangers to the geographical and topographical features of the country, and, as already stated, arrived within the park boundary on June 27. The important duties of registering travelers, sealing guns, making out permits, with statements as to intended camps, taking accurate descriptions of arms, inspecting wagons for durability and safety, giving necessary information to visitors, etc., are entirely different from the ordinary routine duties of camp and garrison and require time to become familiar with.

In addition to all these, as the travel rapidly increased, a constant patrol on the roads was necessary to see that camp fires were extinguished, camping grounds left clean, and objects of interest and great natural wonders uninjured. These latter being so numerous and the crowds of visitors and campers becoming so great, in July it required my entire force to protect them and enforce the regulations on the main traveled road. Fully impressed with the necessity for an additional force to enable me to guard the park properly, application was made to the Adjutant-General of the Army on July 14 for an additional force of one troop of cavalry or one company of infantry. This application was not favorably considered, and two important summer outposts had to be abandoned. Knowing the futility of attempting to give adequate protection to the greatest game park in the world, in which are located the greatest wonders of the world, an area (including annexed timber reserve) of 5,000 square miles, I did not hesitate to employ the services of expert hunters, trailers and trappers, for this purpose, and also for the purpose of instructing the soldiers in this duty. It requires the knowledge of an expert hunter, acquainted with the habits and habitats of game, to catch a poacher of large game, and it requires an old trapper to catch a trapper.

On the 14th of August six of the Yellowstone Park Transportation Company's coaches and one United States Dougherty spring wagon were held up by two masked and well armed highwaymen and the occupants robbed of over \$500. The robbery occurred between 9 and 10 a. m., on the road leading from the Canyon to Norris Geyser Basin, at a point about 3 miles from the Canyon Hotel, on the Solfatara Plateau. Report of the occurrence reached me at Mammoth Hot Springs about noon. All the means at my disposal—in addition to assurance of a money reward which was not at my disposal—were placed in active operation and continued until the robbers were duly arrested and placed in safe confinement, on the night of August 29. The preliminary examination is set for September 10 before United States Commissioner Meldrum in the park. The history of this case, including result of preliminary hearing, will be the subject of a special report.

There has been but one fire so far this season. A smoke was discovered by a scout from the top of Lake Hotel on August 24 and information by wire reached me at Lower Geyser Basin in the evening. Orders were dispatched by courier to the camp below Fountain Hotel and by wire to Fort Yellowstone. Following is the report of senior officer sent to find and extinguish it:

FORT YELLOWSTONE, WYO., August 21, 1897.

SIR: I have the honor to report that, pursuant to verbal orders from Captain Erwin, commanding this post, I left the post at 10 o'clock p. m. on August 24, with Scout Burgess, 11 privates of Troop H, Fourth Cavalry, 4 pack mules, and 110 rations, to find and put out a fire on Astringent Creek. We reached the Canyon Station at 4.40 a. m. the 25th instant, made coffee for the men, and fed the stock. We left the-

Canyon at 6 a. m. Burgess accompanied us as far as the Mud Geyser and returned from there. At the ford I found Sergeant Simons, Fourth Cavalry (Troop D), who said that the fire appeared to be on the Sulphur Hills. We crossed the Yellowstone at the Diamond Ford and went up Pelican Creek to the Sulphur Hills, which we reached at 10 a. m. There was no sign of fire; I spent two hours looking for it, and went into camp at 12 m. on a creek 2 miles west of Astringent Creek. Lieutenant Hawkins reported to me at 2 p. m. with the first sergeant and 8 privates of Troop D, Fourth Cavalry. Lieutenant Hawkins had left the camp at Lower Basin with his detachment at 7 p. m. the previous evening. He had no rations and his detachment was fed from the supplies I had brought. Lieutenant Hawkins and I rode and walked to the north of Sulphur Hills and walked to within 100 yards of the edge of the fire, but without discovering it.

On the 26th I sent the sergeant up the creek on which we were camped, with orders to climb the highest hill he could find and look for signs of the fire. He returned at noon and reported that he got lost and returned to camp accidentally. I also sent two men up Astringent Creek, while Lieutenant Hawkins and I climbed the butte between Astringent and Pelican creeks on foot. Scout Morrison came in about noon, and thought the fire must have been up Pelican Creek. That afternoon, from the divide between Astringent and Pelican creeks, we discovered signs of fire on a hill to the west, and started for the place, riding by the sun. Owing to the almost impassable nature of the country, we had to make a detour, and missed the place by a mile. The next morning, the 27th, we found the fire at 9.30 a. m. It began near the head of the creek that empties into Pelican at the Vermilion Springs and ran northeast over the hill to the head of a branch that comes into Pelican 2 miles below the mouth of Astringent Creek. The fire was three-quarters of a mile long and not over 100 yards wide in any place. Over about an acre it had been in the tree tops; the rest of the area it had only burned the fallen timber and done no damage. It was only smoldering, and at 3 p. m. it was practically extinguished. I had camp moved to within a half mile of the fire, and sent Lieutenant Hawkins home with all but seven men. At dark that night it appeared to be completely extinguished.

On the 28th I kept two men on the ground burying every bit of fire that appeared, and on the morning of the 29th I went carefully over the whole ground and found fire in fourteen different places, none bigger than a man's hand. I left two men to watch the fire and brought the rest of the detachment to the Canyon, and returned to the post on the 30th. On this date two men from the Lake Station returned to the scene of the fire, and to-day, the 31st, two men have gone there to extinguish any fire that may be left.

I circled the fire carefully on foot, searching for the trail of any party that might have left it. There was no trail near it. It was in a country very difficult to traverse, and there was no water within a half mile of the fire. There was no sign of lightning having started it, and it must have started from spontaneous combustion in a decaying log, or from friction of two dry trees rubbed together by the wind.

The detachment marched about 130 miles, the first 50 of which was made in twelve hours and with a pack train. The horses returned in good condition.

Respectfully submitted,

ELMER LINDSLEY,
Second Lieutenant, Fourth Cavalry.

The ACTING SUPERINTENDENT YELLOWSTONE NATIONAL PARK.

GAME.

The prevailing impression is that game, buffalo excepted, is increasing in numbers. The black bear have increased rapidly, and have become very annoying. Complaints have come in from Norris Lunch Station, Fountain Hotel, Thumb Lunch Station, Lake Hotel, and from the station of a detachment of soldiers at the Canyon that bears have broken into their storehouses and destroyed meat and other provisions in large quantities. It is a common occurrence to see from 6 to 12 bears any afternoon feeding on the garbage dumps within a few hundred yards of the Fountain Hotel. Among the number is 1 large grizzly. At Norris, Fountain, Thumb, Lake, and Canyon lunch stations and hotels the bears feed daily on the garbage from the kitchens. At least 12 bears might be disposed of to responsible zoological gardens, where desired, for the expense of capturing, which would be small.

The number of buffalo is estimated at 24. An expert hunter, equipped

with a good knowledge of the park, as well as of the habits and habitats of the game therein, is engaged in making thorough observations with a view of estimating closely the number of each species within the park boundaries, including annexed timber reserve. The result of these observations will be included in my supplemental report for this season.

I have consulted with Dr. Frank Baker, superintendent of the National Zoological Park, at Washington, as to the advisability and practicability of corralling the remaining buffalo in the park with a view to their preservation and increase, and our concurrent conclusion is that it has been the experience of most persons engaged in the capture and domestication of wild animals that while the young of two classes to which the buffalo belong may be caught and confined with usually successful results, it is otherwise with adult animals, a large proportion of which fail to adapt themselves to even slight restraint, and die in consequence. As to the practicability, the buffalo remaining in the park are now scattered in very small herds at a number of points far remote from each other. They are mostly in rough, rugged regions, where they could not safely be captured alive, and their ranges are separated by mountains, streams, and canyons of such impassable character that their transportation could not be accomplished without great injury and loss. Even were the advisability of the project free from doubt, the difficulties in the way of its successful accomplishment appear to be insuperable.

The coyotes are numerous and bold. It is estimated that of a herd of 500 antelope that wintered in the valley of the Gardiner and on the slopes of Mount Everts 75 (15 per cent of the herd) were killed by coyotes during the past winter, and many antelope fawns, elk calves, and broods of grouse have been destroyed by them this season. The opinion has been advanced by a few of the friends of the park that if the coyote is exterminated the gopher in time would eradicate the grass from the winter valley ranges. I do not concur in this opinion, and request authority to reduce the number so that they will not hunt in packs.

FISH.

This subject will be discussed in my supplemental report.

CARRYING FIREARMS.

The custom of carrying firearms through the park has been almost universal among those who live in the neighboring States and travel in their own conveyances or on saddle animals accompanied by pack animals. During the first half of the season it was found that many firearms, fastened with red tape and sealing wax at the point of entry, had broken seals at the point of exit. In many cases it was evident that the seals were broken by accident; others showed signs of having been broken and resealed. To remedy this a new system of sealing has been adopted similar to that used by express companies, and the practice of using red tape and sealing wax has been discontinued.

The regulation prohibiting firearms in the park, except on written permission from the superintendent, has been strictly enforced. It is essential to the best interests of the park.

A certain sentiment of hostility toward the park and of antagonism toward the efforts of the authorities to protect the wild animals from destruction has existed and continues to exist among the ranchers and the people of the settlements near the park boundaries. This feeling

of hostility seems to be due to an idea, which prevails widely, that a reservation of any part of the public domain for the perpetual benefit of the whole people is an invasion and an abridgment of the private rights of the people of the adjoining region. This idea naturally arises from an ignorance of the benefits that result from such reservations to the people of the whole country and an equal ignorance of the advantages which accrue to the inhabitants of the immediate vicinity. In consequence of the benefits which have already resulted to this region from the existence of this park as a breeding place from which the surplus game may wander down into the adjoining country where it may be freely taken, and from the opportunities afforded by the park for remunerative employment during the summer season, there is already a marked diminution of this hostile feeling. As these benefits come to be better understood I believe that this hostility will further diminish, and my best efforts shall be devoted to the encouragement of a friendly sentiment toward the park among the citizens of the surrounding country.

I forward herewith latest map of the park, including the annexed timber reserve, showing roads completed, roads projected, roads under construction, roads available but not yet used by the Park Transportation Company, saddle trails, and old wagon trails that may be used as saddle trails.

Several important matters not referred to in this report will be the subjects of special reports, to be submitted at the close of the season. I submit herewith the meteorological record as kept at Fort Yellowstone by the post surgeon, together with a copy of the latest rules and regulations of the park, existing orders, and forms of licenses and permits.

Very respectfully,

S. B. M. YOUNG,

Colonel Third Cavalry, Acting Superintendent.

The SECRETARY OF THE INTERIOR.

YELLOWSTONE NATIONAL PARK.

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METEOROLOGICAL REGISTER, PORT YELLOWSTONE, WYO.

JULY, 1896.				AUGUST, 1896.				SEPTEMBER, 1896.			
Date.	Maximum.	Rainage.	Winds.	Date.	Maximum.	Rainage.	Winds.	Date.	Maximum.	Rainage.	Winds.
1.....	78	47	31	S.	1.....	82	43	39	SE.	.....	.....
2.....	70	48	22	S.	2.....	78	52	26	S.	.....	.....
3.....	76	43	33	S.	3.....	79	44	35	S.	.....	.....
4.....	84	44	40	S.	4.....	65	20	SW.	0.03	Rain.	.....
5.....	88	49	39	S.	5.....	74	38	36	S.	.....	.....
6.....	88	52	36	S.	6.....	77	43	34	SE.	.....	.....
7.....	84	58	26	S.	7.....	67	49	18	S.	.06	Rain.
8.....	86	49	37	S.	8.....	72	37	35	SE.	.....	.....
9.....	87	52	35	S.	9.....	72	32	30	S.	.....	.....
10.....	86	51	35	S.	10.....	77	43	34	S.	.....	.....
11.....	85	54	31	S.	11.....	77	35	42	NW.	.....	.....
12.....	77	52	25	NW.	12.....	77	36	41	S.	.....	.....
13.....	77	52	25	E.	13.....	77	38	39	N.	.....	.....
14.....	81	57	24	S.	14.....	84	40	44	S.	.....	.....
15.....	82	50	22	SE.	15.....	81	46	35	S.	.....	.....
16.....	79	51	28	SE.	16.....	71	50	21	S.	.....	.....
17.....	79	49	30	S.	17.....	84	48	36	NW.	.06	Rain.
18.....	83	46	37	S.	18.....	82	48	34	SW.	.....	.....
19.....	73	46	27	SE.	19.....	85	53	32	S.	.....	.....
20.....	81	45	36	SE.	20.....	79	50	22	S.	.....	.....
21.....	64	46	18	N.	21.....	65	33	12	NW.	.....	.....
22.....	67	44	23	N.	22.....	65	30	35	NW.	.....	.....
23.....	60	43	17	E.	23.....	76	34	42	S.	.....	.....
24.....	70	37	33	S.	24.....	80	40	40	S.	.....	.....
25.....	76	47	29	SE.	25.....	73	46	27	W.	.....	.....
26.....	72	45	27	E.	26.....	81	40	41	S.	.....	.....
27.....	74	42	32	S.	27.....	84	42	42	S.	.....	.....
28.....	64	52	12	SE.	28.....	86	48	38	W.	.....	.....
29.....	76	41	35	S.	29.....	84	51	33	S.	.....	.....
30.....	70	29	30	S.	30.....	84	50	34	S.	.22	Rain.
31.....	77	43	34	S.	31.....	75	47	28	N.	.....	.....
Total.	2,394	1,476	918	S.	Total.	2,386	1,359	1,027	S.	.37	.....
Mean.	77.22	47.61	29.61	S.	Mean.	76.96	43.83	33.13	S.	.....	.....

Maximum 88°, on 5th and 6th instant; minimum 37°, on 24th instant; mean, 62.41°; precipitation, 2.09; winds, south.

Maximum 86°, on 28th instant; minimum 30°, on 22d instant; mean, 60.39°; precipitation, 0.37; winds, south.

Maximum 81°, on 5th and 6th instant; minimum 21°, on 10th instant; mean, 49.25°; precipitation, 1.10; winds, south.

YELLOWSTONE NATIONAL PARK.

METEOROLOGICAL REGISTER, FORT YELLOWSTONE, WYO.—Continued.

OCTOBER, 1896.						NOVEMBER, 1896.						DECEMBER, 1896.						Remarks.	
Date.	Maximun.	Minimun.	Rainage.	Precipita.	Winds.	Date.	Maximun.	Minimun.	Rainage.	Precipita.	Winds.	Date.	Maximun.	Minimun.	Rainage.	Precipita.	Winds.	Remarks.	
1.....	73	35	38	S.	....	1.....	30	25	5	NE.	0.60	1.....	30	10	20	SE.	....	....	....
2.....	72	35	23	S.	0.06	2.....	32	24	8	SE.	.06	2.....	34	10	20	SE.	....	....	....
3.....	61	33	31	E.	....	3.....	34	20	14	SE.	.07	3.....	36	22	9	SE.	....	....	....
4.....	55	24	26	S.	....	4.....	28	21	7	S.	.02	4.....	39	30	9	E.	....	....	....
5.....	52	26	20	S.	....	5.....	21	6	SE.	....	....	5.....	33	35	8	SE.	....	....	....
6.....	59	20	39	S.	....	6.....	24	2	22	NE.	....	6.....	30	15	15	SE.	....	....	....
7.....	64	22	42	S.	....	7.....	20	1	19	NE.	....	7.....	27	16	11	SW.	....	....	....
8.....	56	31	25	SW.	....	8.....	33	3	30	SE.	.10	8.....	32	18	15	SW.	....	....	....
9.....	45	30	15	N.W.	....	9.....	31	21	10	SE.	.25	9.....	39	26	13	SE.	....	....	....
10.....	60	24	36	S.	....	10.....	32	10	22	NE.	.10	10.....	43	24	19	S.	....	....	....
11.....	58	25	33	S.	....	11.....	29	11	18	NE.	....	11.....	40	22	18	S.	....	....	....
12.....	59	27	32	SW.	....	12.....	36	15	21	S.	....	12.....	39	22	17	SW.	....	....	....
13.....	60	28	32	S.	....	13.....	42	18	24	SE.	....	13.....	38	20	8	S.	.10	....	....
14.....	63	27	36	NE.	....	14.....	47	34	13	S.	....	14.....	33	16	17	SE.	.02	....	....
15.....	61	31	30	S.	....	15.....	50	38	12	S.	....	15.....	40	25	15	S.	.10	....	....
16.....	62	28	34	SE.	....	16.....	47	40	7	SW.	....	16.....	31	15	16	S.	....	....	....
17.....	68	33	35	SE.	....	17.....	43	37	6	SW.	.03	17.....	34	17	17	SE.	....	....	....
18.....	64	31	33	S.	....	18.....	25	19	6	S.	.35	18.....	31	16	14	S.	.02	....	....
19.....	56	29	27	SE.	....	19.....	20	14	6	SE.	.60	19.....	32	18	14	S.	....	....	....
20.....	59	27	32	S.	....	20.....	25	7	18	SE.	.20	20.....	36	21	15	SW.	....	....	....
21.....	53	30	23	S.	....	21.....	38	1	37	S.	.05	21.....	33	26	7	SW.	....	....	....
22.....	53	31	22	SE.	....	22.....	38	20	18	SW.	.40	22.....	22	14	18	SE.	....	....	....
23.....	55	22	33	S.	....	23.....	23	19	8	S.	....	23.....	28	10	18	S.	....	....	....
24.....	58	23	35	S.	....	24.....	22	17	5	N.	.80	24.....	41	20	21	S.	....	....	....
25.....	56	30	26	S.	....	25.....	2	-5	3	NE.	.30	25.....	39	21	18	S.	....	....	....
26.....	46	27	19	SE.	....	26.....	-10	-15	5	NE.	....	26.....	35	13	22	S.	....	....	....
27.....	39	27	12	S.	....	27.....	-11	-26	15	NE.	....	27.....	36	25	11	S.	....	....	....
28.....	39	26	13	SW.	....	28.....	-4	-27	23	SE.	....	28.....	40	26	14	SW.	....	....	....
29.....	40	21	19	SW.	....	29.....	11	-17	28	SE.	....	29.....	35	22	13	SW.	....	....	....
30.....	40	19	21	S.	....	30.....	18	-15	33	SE.	....	30.....	34	15	19	SE.	....	....	....
31.....	38	20	18	SW.	....	31.....	10.90	14.96	S.	....	.06	31.....	23	8	SE.	.07	....	....	....
Total.	1,724	749	975	....	....	Total.	776	327	449	....	3.92	Total.	1,081	630	451	....	.46	....	....
Mean.	55.61	24.16	31.45	S.	....	Mean.	25.86	20	10.90	....	....	Mean.	34.87	20.32	14.55	SE.	....	....	....

Maximum, 73° on 1st instant; minimum, 19° on 30th instant; mean, 39.88°; precipitation, 0.06; winds, south.

Maximum, 50° on 15th instant; minimum, 10° on 28th instant; mean, 18.38°; precipitation, 3.92; winds, south.

Maximum, 43° on 10th instant; minimum, 10° on 1st instant; mean, 27.59°; precipitation, 0.46; winds, southeast.

METEOROLOGICAL REGISTER, FORT YELLOWSTONE, WYO.—Continued.

JANUARY, 1897.				FEBRUARY, 1897.				MARCH, 1897.				
Date.	Max'd. temp.	Min'd. temp.	Winds.	Date.	Max'd. temp.	Min'd. temp.	Winds.	Date.	Max'd. temp.	Min'd. temp.	Winds.	
19	9	10	S. SE, S.	1	40	25	N.W. NW. SW. SW.	1	33	12	NE. NE.	
21	0	11	S.E., S.	2	35	29	6 19 19	2	27	6	S. S.	
12	-1	13	S. S.	3	34	15	19 S.	3	37	8	S. S.	
17	-6	23	S. S.	4	28	19	9 S.	4	31	9	W. N.W.	
26	12	14	S.E., S.	5	36	26	10 E. S.	5	25	5	N.W. NE.	
6	19	11	SW. SW.	6	36	26	10 S.	6	9	-4	Snow.	
7	35	23	S.E., S.	7	33	20	13 S.	7	26	2	S.W. S.W.	
8	40	19	S. S.	8	34	19	15 S.	8	25	9	S. S.	
9	35	13	S.E., S.	9	30	16	14 S.	9	29	14	S. S.	
10	32	10	S. S.	10	20	-5	25 SW.	10	27	18	S. S.	
11	25	7	S. S.	11	29	12	17 W. N.	11	22	-2	NE. NE.	
12	32	12	S.E., S.	12	31	16	15 N.	12	-16	4	Snow.	
13	28	15	S.W., S.W.	13	19	1	18 S.	13	17	24	S.W. S.W.	
14	29	2	S.E., S.	14	24	5	19 S.	14	24	0	S. S.	
15	30	11	S.W., S.W.	15	32	16	16 S.	15	31	10	S. S.	
16	22	8	N.W., N.W.	16	30	17	13 NW.	16	39	5	S. S.	
17	25	4	N.W., N.W.	17	20	-2	22 SW.	17	33	19	S. S.	
18	25	10	S.E., S.	18	22	-10	32 SW.	18	34	9	S. S.	
19	32	12	S. S.	19	33	9	24 N.	19	29	5	S. S.	
20	31	18	S. S.	20	26	8	18 S.	20	30	13	S. S.	
21	36	25	S. S.	21	-2	2	23 NW.	21	23	10	N. N.	
22	40	32	S. S.	22	22	5	17 SW.	22	22	-11	S. S.	
23	38	0	N.W., N.W.	23	19	5	14 NW.	23	27	15	S. S.	
24	2	-18	20	24	28	9	19 NW.	24	38	21	S. S.	
25	-12	-25	13	25	30	10	N.W. NW.	25	-	-	Snow traces.	
26	-9	-29	20	26	30	2	28 W.	26	42	34	Rain traces.	
27	5	-21	26	27	36	16	20 W.	27	34	24	S. S.	
28	21	-10	31	28	40	23	17 S.	28	27	13	Snow traces.	
29	36	18	S. S.	Total	818	330	488	29	33	22	N.W. N.W.	
30	37	23	14	Mean	29.21	11.79	17.42	.80	30	25	17	Snow traces.
31	35	20	15				S.	31	34	19	N.W. N.W.	
Total	765	212	553					Total	880	328	552	1.06
Mean	24.67	6.83	17.84					Mean	28.387	10.580	17.806	S. S.

Maximum, 40° on 8th and 22d instant; minimum, -29° on 26th instant; mean, 15.75° ; precipitation, 1.12; winds, south.

Maximum, 40° on 1st and 28th instant; minimum, -10° on 18th instant; mean, 20.50° ; precipitation, 0.80; winds, south.

Maximum, 42° on 26th instant; minimum, -17° on 13th instant; mean, 19.48° ; precipitation, 1.06; winds, south.

YELLOWSTONE NATIONAL PARK.

MÉTÉOROLOGICAL REGISTER, FORT YELLOWSTONE, WYO.—Continued.

APRIL, 1897.

MAY, 1897.

JUNE, 1897.

Date.	Maximun. Rainfall.	Minimun. Rainfall.	Wind. Precipita. tion.	Date.	Maximun. Rainfall.	Minimun. Rainfall.	Wind. Precipita. tion.	Date.	Maximun. Rainfall.	Minimun. Rainfall.	Wind. Precipita. tion.	Remarks.
1....	34	15	N.E.	1....	68	38	S.	1....	50	36	S.	Rain.
2....	31	23	N.	2....	67	33	S.	2....	47	35	N.W.	Rain.
3....	35	19	N.	3....	72	36	S.	3....	46	35	N.W.	.....
4....	42	20	N.W.	4....	75	38	S.E.	4....	54	37	N.	.....
5....	37	25	N.	5....	73	39	S.	5....	59	38	21	.....
6....	38	11	N.W.	6....	69	41	S.E.	6....	69	36	S.	.....
7....	37	28	N.W.	7....	62	39	S.E.	7....	71	45	26	SW.
8....	35	27	N.W.	8....	7	47	S.E.	8....	67	49	18	SE.
9....	42	25	N.	9....	51	33	S.E.	9....	64	39	25	SW.
10....	45	11	S.E.	10....	56	32	S.	10....	68	36	32	SW.
11....	39	22	N.W.	11....	60	34	N.W.	11....	75	40	35	SW.
12....	39	23	N.W.	12....	66	40	N.W.	12....	79	47	32	S.
13....	47	20	N.W.	13....	70	36	S.E.	13....	83	36	26	SW.
14....	50	29	S.E.	14....	75	37	N.W.	14....	82	54	28	N.W.
15....	51	29	N.	15....	76	42	S.E.	15....	80	52	28	N.W.
16....	61	31	S.E.	16....	73	43	S.W.	16....	59	37	22	S.
17....	60	33	S.W.	17....	73	41	S.E.	17....	46	33	13	SW.
18....	59	26	S.	18....	73	40	S.E.	18....	61	37	24	S.
19....	61	31	S.E.	19....	76	37	S.	19....	65	40	25	S.
20....	52	32	N.W.	20....	77	44	S.E.	20....	71	40	31	S.
21....	44	32	12	21....	66	51	15	21....	81	41	40	.....
22....	37	28	N.W.	22....	70	40	N.W.	22....	78	46	32	S.
23....	50	26	S.E.	23....	76	37	S.W.	23....	71	43	28	SW.
24....	58	30	N.W.	24....	73	45	S.	24....	53	41	12	N.W.
25....	66	33	S.	25....	70	45	25	25....	69	41	28	N.W.
26....	63	35	S.	26....	54	39	15	26....	71	43	28	W.
27....	60	43	S.E.	27....	70	39	S.	27....	64	44	20	SE.
28....	55	25	30	28....	75	41	S.E.	28....	63	42	21	SE.
29....	54	34	20	29....	77	44	33	29....	66	41	25	S.
30....	63	33	30	30....	77	44	33	30....	75	47	28	S.
31....	63	33	S.	31....	70	46	24	31....	66	41	24	SW.
Total.	1,445	327	618	Total.	2,137	1,213	924	Total.	1,987	1,242	745	Maximum, 77° on 20th, 29th, and 30th instant; minimum, 23° on 8th instant; precipitation, 1.21; winds, south.
Mean.	48.16	27.57	20.60	Mean.	68.93	39.13	29.80	Mean.	66.23	41.40	24.83	.....

Maximum, 66° on 25th instant; minimum, 11° on 6th instant; mean, 26.60; precipitation, 1.21; winds, south.

Maximum, 89° on 13th instant; minimum, 33° on 17th instant; mean, 53.81; precipitation, 1.55;

Maximum, 23° on 8th instant; minimum, 20.80; precipitation, 1.21; winds, south.

METEOROLOGICAL REGISTER, FORT YELLOWSTONE, WYO.—Continued.

JULY, 1897.

AUGUST, 1897.

YELLOWSTONE NATIONAL PARK.

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Date.	Maximun. Rainage.	Minimun. Rainage.	Wind. Precipit.	Temp. Remarks.	Date.	Maximun. Rainage.	Minimun. Rainage.	Wind. Precipit.	Temp. Remarks.	
1...	77	32	25	S.		1...	74	43	31	S.
2...	61	47	14	S.		2...	70	41	29	NW.
3...	51	39	12	NW.		3...	73	42	31	NW.
4...	43	43	12	S.		4...	80	48	32	S.
5...	55	68	39	NW.		5...	82	51	31	S.
6...	69	48	21	S.		6...	84	50	34	S.
7...	74	44	30	NW.		7...	82	50	32	S.
8...	65	45	20	NW.		8...	76	51	35	S.
9...	73	36	37	NW.		9...	73	53	20	S.
10...	78	38	40	S.		10...	81	49	32	S.
11...	85	43	42	S.		11...	85	51	34	S.
12...	89	47	42	S.		12...	76	49	27	S.
13...	81	59	22	NW.		13...	71	52	19	S.
14...	80	50	30	S.		14...	74	40	34	NW.
15...	81	50	31	S.		15...	77	42	35	S.
16...	82	50	32	NW.		16...	80	43	37	NW.
17...	68	50	18	NW.		17...	79	48	31	NW.
18...	56	36	20	NW.		18...	77	42	35	NW.
19...	62	32	30	NW.		19...	80	42	38	NW.
20...	74	51	23	S.		20...	81	42	39	NW.
21...	79	45	34	S.		21...	83	44	29	SIE.
22...	78	46	32	S.		22...	77	48	29	NW.
23...	74	45	29	S.		23...	83	46	37	NW.
24...	77	51	26	S.		24...	88	51	37	NW.
25...	78	45	33	S.		25...	81	50	31	NW.
26...	82	42	40	NW.		26...	79	37	42	NW.
27...	87	48	39	S.		27...	80	46	34	S.
28...	89	42	47	S.		28...	81	47	34	S.
29...	84	49	35	S.		29...	83	40	43	S.
30...	82	57	25	SE.		30...	81	50	31	S.
31...	80	47	33	SW.		31...	64	50	14	SW.
Total	2,319	1,416	903	SW.		Total	2,435	1,438	997	SW.
Mean	74,806	45,677	29,129	SW.		Mean	78,54	46,38	32,16	SW.

Maximum 89°, on 12th and 28th instant; minimum 32°, on 19th instant; mean, 60.2°; precipitation, 1.11; winds, southwest.

Maximum 88°, on 24th instant; minimum 37°, on 26 instant; mean, 62.46°; precipitation, 0.57; winds, northwest.

RULES AND REGULATIONS OF THE YELLOWSTONE NATIONAL PARK.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., June 1, 1897.

The following rules and regulations for the government of the Yellowstone National Park are hereby established and made public pursuant to authority conferred by section 2475, Revised Statutes, United States, and the act of Congress approved May 7, 1894:

1. It is forbidden to remove or injure the sediment or incrustations around the geysers, hot springs, or steam vents; or to deface the same by written inscription or otherwise; or to throw any substance into the springs or geyser vents; or to injure or disturb, in any manner, or to carry off any of the mineral deposits, specimens, natural curiosities, or wonders within the park.

2. It is forbidden to ride or drive upon any of the geyser or hot-spring formations, or to turn loose stock to graze in their vicinity.

3. It is forbidden to cut or injure any growing timber. Camping parties will be allowed to use dead or fallen timber for fuel.

4. Fires shall be lighted only when necessary, and completely extinguished when not longer required. The utmost care should be exercised at all times to avoid setting fire to the timber and grass, and anyone failing to comply therewith shall be peremptorily removed from the park.

5. Hunting or killing, wounding or capturing of any bird or wild animal, except dangerous animals, when necessary to prevent them from destroying life or inflicting an injury, is prohibited. The outfits, including guns, traps, teams, horses, or means of transportation used by persons engaged in hunting, killing, trapping, ensnaring, or capturing such birds or wild animals, or in possession of game killed in the park under other circumstances than prescribed above, will be forfeited to the United States, except in cases where it is shown by satisfactory evidence that the outfit is not the property of the person or persons violating this regulation, and the actual owner thereof was not a party to such violation. Firearms will only be permitted in the park on written permission from the superintendent thereof. On arrival at the first station of the park guard, parties having firearms will turn them over to the sergeant in charge of the station, taking his receipt for them. They will be returned to the owners on leaving the park.

6. Fishing with nets, seines, traps, or by the use of drugs or explosives, or in any other way than with hook and line, is prohibited. Fishing for purposes of merchandise or profit is forbidden by law. Fishing may be prohibited by order of the superintendent of the park in any of the waters of the park, or limited therein to any specified season of the year, until otherwise ordered by the Secretary of the Interior.

7. No person will be permitted to reside permanently or to engage in any business in the park without permission, in writing, from the Department of the Interior. The superintendent may grant authority to competent persons to act as guides and revoke the same in his discretion, and no pack trains shall be allowed in the park unless in charge of a duly registered guide.

8. The herding or grazing of loose stock or cattle of any kind within the park, as well as the driving of such stock or cattle over the roads of the park, is strictly forbidden, except in such cases where authority therefor is granted by the Secretary of the Interior.

9. No drinking saloon or barroom will be permitted within the limits of the park.

10. Private notices or advertisements shall not be posted or displayed within the park, except such as may be necessary for the convenience and guidance of the public, upon buildings on leased ground.

11. Persons who render themselves obnoxious by disorderly conduct or bad behavior, or who violate any of the foregoing rules, will be summarily removed from the park, and will not be allowed to return without permission, in writing, from the Secretary of the Interior or the superintendent of the park.

Any person who violates any of the foregoing regulations will be deemed guilty of a misdemeanor, and be subjected to a fine as provided by the act of Congress approved May 7, 1894, "to protect the birds and animals in Yellowstone National Park and to punish crimes in said park, and for other purposes," of not more than one thousand dollars, or imprisonment not exceeding two years, or both, and may be adjudged to pay all costs of the proceedings.

CORNELIUS N. BLISS.
Secretary of the Interior.

INSTRUCTIONS TO PERSONS TRAVELING THROUGH YELLOWSTONE NATIONAL PARK.

DEPARTMENT OF THE INTERIOR,
OFFICE OF SUPERINTENDENT YELLOWSTONE NATIONAL PARK,
Mammoth Hot Springs, Wyo., June 20, 1897.

The following instructions for the information and guidance of parties traveling through the Yellowstone Park, having received the approval of the Secretary of the Interior, are published for the benefit of all concerned:

(1) *Fires.*—The greatest care must be exercised to insure the complete extinction of all camp fires before they are abandoned. All ashes and unburned bits of wood must, when practicable, be thoroughly soaked with water. Where fires are built in the neighborhood of decayed logs, particular attention must be directed to the extinguishment of fires in the decaying mold. Such material frequently smolders for days and then breaks out into dangerous conflagration. Fire may also be extinguished where water is not available by a complete covering of earth well packed down.

(2) *Camps.*—No camp will be made at a less distance than 100 feet from any traveled road. Blankets, clothing, hammocks, or any other article liable to frighten teams must not be hung at a nearer distance than this to the road. The same rule applies to temporary stops, such as for feeding horses or for taking luncheon.

Camp grounds must be thoroughly cleaned before they are abandoned, and such articles as tin cans, bottles, cast-off clothing, and other débris must be either buried or taken to some place where they will not offend the sight.

(3) *Bicycles.*—Many of the horses driven in the park are unused to bicycles and liable to be frightened by them. The greatest care must therefore be exercised by their riders. In meeting teams riders will always dismount and stand at the side of the road—the lower side, if the meeting be on a grade. In passing teams from the rear, riders will ring their bell as a warning and inquire of the driver if they may pass. If it appear from the answer that the team is liable to be frightened, they may ask the driver to halt his team and allow them to dismount and walk past.

Riders of bicycles are responsible for all damages caused by failure to properly observe these instructions.

(4) *Fishing.*—All fish less than 6 inches in length should at once be returned to the water, with the least damage possible to the fish. No fish should be caught in excess of the number needed for food.

(5) *Dogs.*—When dogs are taken through the park, they must be prevented from chasing the animals and birds or annoying passers-by. To this end they must be carried in the wagons or led behind them while traveling, and kept within the limits of the camps when halted. Any dog found at large in disregard of this section will be killed.

(6) *Grazing animals.*—Only animals actually in use for purposes of transportation through the park can be grazed in the vicinity of the camps. They will not be allowed to run over any of the formations, nor near to any of the geysers or hot springs; neither will they be allowed to run loose in the roads.

(7) *Miscellaneous.*—The carving or writing of names or other things on any of the mileposts or signboards, or any of the seats, railings, or other structures, or on the trees, will not be permitted.

Persons are not allowed to bathe near any of the regularly traveled roads in the park without suitable bathing clothes.

(8) Willful disregard of the instructions will result in the ejection of the offending person or persons from the park.

S. B. M. YOUNG,
Colonel, United States Army,
Acting Superintendent Yellowstone National Park.

ADDITIONAL RULES ENFORCED BY SUPERINTENDENT.

OFFICE SUPERINTENDENT YELLOWSTONE NATIONAL PARK,
Mammoth Hot Springs, Wyo., July 10, 1897.

Warning is given that on and after July 17 instant any loose cattle or stock found wandering within the limits of the park in violation of paragraph 8 of the Rules and Regulations of the Yellowstone National Park, 1897, will be driven out of the park via Riverside Station, on the west side, and permission will not be given for their return through the park.

S. B. M. YOUNG,
Colonel, United States Army,
Acting Superintendent Yellowstone National Park.

YELLOWSTONE NATIONAL PARK.

DEPARTMENT OF THE INTERIOR,
OFFICE SUPERINTENDENT YELLOWSTONE NATIONAL PARK,
Mammoth Hot Springs, Wyo., July 17, 1897.

To avoid accidents in future and for the safe conduct of tourists traveling through the park, driving over the roads of the park at night is prohibited, except in special cases of emergency, for which permission must be obtained in writing from this office.

S. B. M. YOUNG,
Colonel, United States Army, Acting Superintendent.

DEPARTMENT OF THE INTERIOR,
OFFICE SUPERINTENDENT YELLOWSTONE NATIONAL PARK,
Mammoth Hot Springs, Wyo., August 11, 1897.

From this date until further orders fishing is prohibited in the following-named streams: Gardiner River, from its mouth up to the junction of the east and middle forks; Glen Creek, Indian Creek, Willow Creek, Obsidian Creek, and Beaver Lake.

S. B. M. YOUNG,
Colonel, United States Army, Acting Superintendent.

FORM OF LICENSE FOR GUIDES.

Registered No. ——.]

UNITED STATES OF AMERICA.

DEPARTMENT OF THE INTERIOR.

OFFICE OF SUPERINTENDENT YELLOWSTONE NATIONAL PARK.

Be it known that —— ——, of ——, is hereby authorized under paragraph 7, Rules and Regulations, and upon the conditions hereinafter set forth, to act as guide and to personally conduct back trains in and through the Yellowstone National Park from ——, 189—, to ——, 189—, using for such purpose —— saddle and pack animals.

The names and addresses of the guide and each tourist, as well as those of all employees, with schedule of route and camping places of all parties taken into the park, must be registered by the guide in a book kept for that purpose by the acting superintendent of the park.

On the wagon roads of the park vehicles have the right of way over pack trains or saddle animals, and the guide must see that no vehicle is delayed nor the horses thereof frightened by his outfit.

Special attention must be given to the complete extinguishment of fires. (Par. No. 1, "Instructions to persons traveling through the Yellowstone National Park.")

All camping places must be carefully policed before being abandoned.

The guide will be held responsible for all violations of the park regulations by his employees or by parties conducted through the park by him, and must report to the acting superintendent of the park all violations of such regulations which come to his knowledge in any way.

For willful violation of the conditions hereof on the part of the guide, or of the park regulations by his employees or persons carried by him, this authority will be revoked by the acting superintendent of the park.

Signed at Mammoth Hot Springs, Wyo., this —— day of ——, 189—.

Colonel, United States Army, Acting Superintendent.

— — — — — (Signature of guide.)

YELLOWSTONE NATIONAL PARK.

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List of registered guides.

No.	Guide.	Residence.	Number animals.	Duration.
1	J. G. Fiske.....	Jacksons Hole, Wyo.....	-----	
2	David Rhodes.....	Gardiner, Mont.....	25	Aug. 10 to Nov. 15, 1897.
3	W. A. Hague.....	Fridley, Mont.....	25	Aug. 11 to Dec. 1, 1897.
4	Elwood Hofer.....	Gardiner, Mont.....	35	Do,
5	Taswell Woody.....	Yanceys.....	30	Aug. 12 to Dec. 1, 1897.
6	Wm. J. Proctor.....	Beargulch, Mont.....	12	Aug. 16 to Dec. 1, 1897.
7	B. D. Sheffield.....	Livingston, Mont.....	20	Aug. 18 to Nov. 1, 1897.
8	Richard Randall.....	Gardiner, Mont.....	20	Aug. 19 to Dec. 1, 1897.
9	Thos. Smith.....	Jacksons Hole, Wyo.....	*10	Aug. 21 to Dec. 1, 1897.
10	Wm. Van Buskirk.....	Gardiner, Mont.....	35	Aug. 26 to Dec. 1, 1897.
11	Fountain Black.....	Chico, Mont.....	10	Aug. 27 to Nov. 1, 1897.
12	Frank Gruard.....	Sheridan, Wyo.....	30	Aug. 29 to Dec. 1, 1897.

* And one 2-horse spring wagon.

Observations made on geysers, hot springs, etc., in the park by members of the geological department will be reported through that department.

FORM OF PERMIT TO CARRY ARMS, SEALED.

No. ——.]

DEPARTMENT OF THE INTERIOR,
OFFICE OF SUPERINTENDENT YELLOWSTONE NATIONAL PARK,

_____, 189—.

Mr. —— —— has permission to carry through the park, sealed, the following arms, viz, —— (to travel by the wagon road only), from —— to ——, via ——.

By order of the acting superintendent:

_____,
_____.

[Reverse side of form.]

Examined at—	Date.	By—
Norris		
L. Basin		
U. Basin		
Canyon		
Tlumb		
Snake River		
Riverside		
Soda Butte		
Fort Yellowstone		
Upper Yellowstone		
Pelican Creek		

FORM OF RECEIPT FOR FIREARMS.

No. ——.]

DEPARTMENT OF THE INTERIOR,
OFFICE OF SUPERINTENDENT YELLOWSTONE NATIONAL PARK,

_____, 189—.

Received from Mr. —— —— the following firearms, to be returned to him on his exit from the park at this post: ——.

_____,
_____.

APPENDIX A.

Statement of cases brought before Hon. John W. Meldrum, United States commissioner, since the 1st day of July, A. D. 1897.

July 5.—United States v. Thomas McKeever, Patrick McGeehan, and Samuel Davis. Charge: Violation of rules and regulations promulgated by Secretary of the Interior with reference to management and care of Yellowstone National Park. Fined \$10 each.

July 8.—United States v. John Sweeney. Charge: Assault. Trial had July 20. Defendant discharged.

July 14.—United States v. J. D. Lorden and J. G. Seiveright. Charge: Violation of rules and regulations. Defendants fined \$5 each.

July 19.—United States v. John Lindsay and Hugh McDerment. Charge: Violation of rules and regulations, etc. Fined \$10 each.

July 19.—United States v. J. M. Lloyd. Charge: Violation of rules and regulations. Trial had August 10. Defendant discharged.

July 25.—United States v. Frank L. Patrick. Charge: Assault. Defendant not yet arrested.

July 29.—United States v. A. H. Conlisk and E. S. Crocker. Charge: Violation of rules and regulations. Defendants discharged.

August 12.—United States v. John Townsend. Charge: Assault. Fined \$25 and costs.

August 25.—United States v. H. K. Bateman, James Elston, and Otto Boetticher. Charge: Violation of rules and regulations. Defendants adjudged to pay costs.

August 25.—United States v. F. M. Joslyn and M. T. Gandy. Charge: Violation of rules and regulations. Defendants fined \$5 each and costs.

August 26.—United States v. Gus Smitzer and George Reeb. Charge: Robbery. Case pending.

August 27.—United States v. Isaac Wampler and W. D. Coates. Charge: Violation of rules and regulations. Defendants adjudged to pay costs.

August 28.—United States v. John Austin and S. N. Van Blaricton. Charge: Violation of rules and regulations. Defendants fined \$5 each and costs.

August 30.—United States v. C. B. Lyle. Charge: Violation of rules and regulations. Defendant adjudged to pay costs—\$9.50.

Many other cases, such as leaving camp not properly policed and fires not thoroughly extinguished, where the parties were arrested and marched back many miles and made to comply with the rules, having been considered sufficiently punished, were not sent before the commissioner.

APPENDIX B.

LEASES IN YELLOWSTONE NATIONAL PARK.

Yellowstone Park Transportation Company: Mammoth Hot Springs, 2 acres; Norris, 2 acres; Fountain, 1 acre; Upper Geyser Basin, 2 acres; Lake, 2 acres; Canyon, 1 acre; building, etc., for the accommodation of employees and stock.

Yellowstone Park Association: Mammoth Hot Springs, Mammoth Hotel and commissary; Mammoth Hot Springs, Cottage Hotel and Mammoth barn; Fountain (Lower Basin), cottages; Fountain, Fountain Hotel and barn; Lake, Lake Hotel and barn; Canyon, Canyon Hotel, pump house, and barn.

Yellowstone Lake Boat Company: Near Lake Hotel, 2 acres; Frank Island, 2 acres; Stevenson's Island, 2 acres; Dot Island, 1 acre; West Thumb, 1 acre; Ways, 2 acres; Southeast Arm, 2 acres; Dot Island Game Corral, 2 acres; to be located by superintendent, 6 acres.

Jennie H. Ash: Mammoth Hot Springs, dwelling, post-office, and store.

Ole A. Anderson: Mammoth Hot Springs, dwelling and store.

John F. Yancey: Pleasant Valley, hotel.

F. J. Haynes: Mammoth Hot Springs, studio.

F. J. Haynes: Upper Geyser Basin, studio.

APPENDIX C.

Greatest number of arrivals in one day (July 19).....	434
Least number of arrivals in one day (July 18)	2
Greatest number of arrivals in one week (week ending July 26).....	1,416
Least number of arrivals in one week (week ending June 8)	40
Greatest number of arrivals in one month (month ending July 31).....	2,480
Least number of arrivals in one month (month ending June 30)	377

Greatest number of tourists fed in one day.

	Date.	Number.
Mammoth Hot Springs Hotel	July 25	1,341
Fountain Geyser Hotel	July 27	737
Lake Hotel	July 25	629
Canyon Hotel	July 25	855
Norris Lunch Station	July 27	561
Upper Basin Lunch Station	July 30	332
Thumb Lunch Station	July 26	257

Greatest number of tourists accommodated over night at each hotel.

	Date.	Number.
Mammoth Hotel	July 24	397
Fountain Hotel	July 23	418
Lake Hotel	July 26	212
Canyon Hotel	July 24	355

Extra bedroom equipment bought, season of 1897, account of Christian Endeavor business.

Woven wire double bed springs	267
Hair mattresses	169
Pillows	475
Pillow slips	325
Sheets	340
Spreads	123
Room towels	570
Napkins	468

SUPPLEMENTAL REPORT.

DEPARTMENT OF THE INTERIOR,
SUPERINTENDENT YELLOWSTONE NATIONAL PARK,
Mammoth Hot Springs, Wyo., November 10, 1897.

SIR: I have the honor to submit the following supplemental report of the condition of affairs and of the management of the Yellowstone National Park from August 21 to present date.

TRAVEL.

The total number of visitors carried over the regular route by the Yellowstone National Park Transportation Company was 781; total number carried by C. J. Bassett via Beaver Canyon, 22; total number carried through by licensed transportation of personally conducted camping parties, 129; total number carried through in private transportation, 1,127; total number of bicyclers, foot travelers, etc., 41. The total number of persons taking trip on the Yellowstone Lake, traveling by the regular transportation company, 628; total number taking this trip who went through with camping parties, 345. Total number of visitors to the park since August 21, 2,100.

The aggregate number of tourists carried over the regular route by the Yellowstone National Park Transportation Company during the entire season, 4,626; aggregate number carried by C. J. Bassett via Beaver Canyon, 124; aggregate number carried by licensed transportation of personally conducted camping parties, 1,354; aggregate number carried by private transportation, 4,454; aggregate number of bicyclers, foot travelers, etc., 235.

The aggregate number taking the trip on Yellowstone Lake traveling by regular transportation company was 2,295; number of persons taking this trip who went through with camping parties, 1,267; aggregate number taking trip on the Yellowstone Lake during the season, 3,562.

Grand aggregate of visitors to the park for the season of 1897, 10,825.

Violations of the rules and regulations were extremely rare during the latter part of the season. Exceptions, however, were found in neglect and carelessness displayed in failing to thoroughly extinguish their camp fires and police their temporary camp grounds, by tourists traveling in private transportation. These exceptions do not apply to the personally conducted camping parties traveling with licensed transportation.

FIRE.

But one fire occurred in the park after August 21. This was between Wildcat Peak and Bobcat Ridge, in the forest reserve south of the park. It was extinguished by a detachment of men under Lieutenant

Hawkins, from the Lower Geyser Basin, assisted by men from the outpost at Snake River Station. It was a series of small fires set at different places between Wildcat Peak and Bobcat Ridge, supposed to have been kindled by hunters for the purpose of preventing large game from passing north between these points.

Substantial sidings have been erected at the various points of interest along the regularly traveled route, for the comfort and convenience of tourists in getting out of and into coaches and other conveyances.

The mania for carving and writing names on guard rails, benches, etc., placed for the safety and convenience of visitors, seems to have increased during the latter part of the season. It is contemplated to erect a large bulletin board for the convenience of visitors next season affected with this insane passion, with columns for name and address, and a heading, "All fools and idiots required to register here only."

The Park Association should construct a hotel at Upper Geyser Basin where now there is but a temporary lunch station. I have been informed by Hon. D. S. Lamont, vice-president Northern Pacific Railway, that the subject of building a hotel at that point, and also a new one at Mammoth Hot Springs, will be taken under advisement at the meeting of the directors of the association in December next. The old, barn-like structure called the "Mammoth Springs Hotel" should be torn down and the plateau at its front set apart as a military reservation for parade and drill purposes, and for ground on which the post of Fort Yellowstone could be enlarged; it is now cramped for room for its present small garrison. The new hotel should be built on the site of the old post, from which the ramshackle structures in which the troops were formerly housed should be removed.

On my recommendation a proposition to establish permanent camps, suitable in neatness, comfort, and convenience for a large number of visitors who desire to experience that mode of an outing in the park, is now being considered by the Park Association and the Park Transportation Company. There is a demand for this kind of accommodations, and, in my judgment, it is for the interest of the public, and the proper management of the park could be best subserved by the accomplishment of this proposition. The maximum charges for this service should be fixed by the Department, and the acting superintendent should see that the service charged for, both by the Park Association and the Park Transportation Company, are duly, properly, and courteously rendered. There is another class of travel which can be accommodated as heretofore by the annual licenses for five conveyances each, granted on the approval of the acting superintendent to applicants of reliable character who live at and near the railroad terminus.

The increase of travel entering the park on the west from the Union Pacific Railroad demands a better class of wagon transportation. Application for a license to supply this demand is now under consideration, and will be forwarded in due time for consideration by the Department.

ROADS.

A generous appropriation by Congress for the proper repairs of the present roads and the building of new ones, as noted in my estimates to the Quartermaster-General, would be a measure of economy. Many portions of the present traveled roads should be macadamized, and protected by strong revetments. Permanent stone guards, connected by guard rails, should be constructed at all dangerous points. A massive stone or steel bridge—the former preferable—should take the place

of the wooden structure in the Golden Gate Pass. The timbers in this structure have lost their elasticity, and a new bridge should certainly be constructed next season.

The road down Madison Canyon to the west boundary over the new site has been opened, but not thoroughly completed; the road down Lewis and Snake river valleys, from the Thumb to the southern border of the forest reserve at head of Jacksons Lake, is open, but requires much work to thoroughly complete it; the road from Mammoth to the northeastern corner near Cooke City requires large expenditure for completion. Baronett's bridge, on this road, is unsafe and must be renewed. The proposed road from Canyon Hotel down the Yellowstone to Yancey's, to intersect the Cooke City road, should certainly be constructed. Professor Walcott, Director of the Geological Survey, at my request passed over the proposed location of this road and fully concurs in my recommendation that it be built.

It is due to the public that a commission, composed of a member of the Geological Survey, an officer of the Engineer Corps, United States Army, and a gentleman from civil life, be appointed to advise with the acting superintendent on the location of new roads and saddle trails, in order that all the beauties, wonders, and grand scenery may be made accessible to visitors.

PROTECTION.

The area of the park proper and of about two-thirds of the timber reserve to the south, is, and can be, well protected against poachers during the winter season by the present garrison of Fort Yellowstone, aided by the expert guides and scouts now employed. Two or three soldiers accompany each civilian scout.

These details are changed from time to time, in order that all may become acquainted with the country and habits and habitats of the game, and the tricks and cunning ways of the poachers.

During the summer season an additional force of mounted and foot troops is necessary to protect the park, and enforce the rules and regulations.

The forest reserve adjoining the east boundary of the park comprises an area of over 1,000 square miles. There are about 125 people living and mining in this section, during the summer. Of this number, about 100 are miners and prospectors, and about 25 are ranchers. These people obtain their fresh meat from the big game in this section. By a glance at the map it will be seen that a high, rugged, impassable (in winter) range of mountains (altitude averaging 10,000 feet) extends from the northwest corner of this reserve, longitude 110° to $110^{\circ} 55'$ on south boundary.

One troop of cavalry should have station east of this dividing line, with headquarters in Stinking Water mining region, with outposts on Shoshone River and in Sunlight Basin, near the eastern boundary of the forest reserve, and on Thoroughfare Plateau and the headwaters of the Yellowstone. Foot troops are necessary in Upper Geyser Basin and at Mammoth Hot Springs during the summer season, in order to afford adequate protection to the wonderful formations, incrustations, etc., at these points, while the cavalry would be occupied in keeping the main traveled routes thoroughly patrolled, to require all campers, travelers, and other persons found in the park to comply with the rules and regulations governing the same.

It is impossible to accomplish this with the present small force at Fort Yellowstone.

FISH AND GAME.

Attention is invited to the following report on fish and game by Lieut. Elmer Lindsley, Fourth Cavalry:

FORT YELLOWSTONE, WYO., November 4, 1897.

SIR: In obedience to your verbal instructions, I have the honor to submit the following report regarding the fishes, birds, and animals in the park.

FISHES.

The waters of the park have been stocked as follows (report of superintendent, 1892):

In 1889: East Fork of Gardiner above falls, 1,000 black-spotted trout; Gibbon River above Virginia Cascade, 990 rainbow trout; Madison River above Keppler's Cascade, 995 Loch-Leven trout; Gardiner River above falls, 4,975 brook trout; Yellowstone River above falls, 2,000 whitefish; Twin Lakes, 1,000 whitefish.

In 1890: Shoshone Lake, 24,012 lake trout; Shoshone Lake, 3,350 Loch-Leven trout; Lewis Lake, 12,013 lake trout; Lewis Lake, 3,350 Loch-Leven trout; West Fork of Gardiner above falls, 7,850 brook trout; Nez Perce Creek, 9,850 Von Behr trout; Yellowstone River above falls, 10,000 whitefish.

All of these plants, except that of the whitefish in the Yellowstone, were made in previously barren waters. No trace has ever been found of the whitefish in either the Yellowstone River or the Twin Lakes.

The rainbow trout planted in Gibbon River seem to have come down over the cascades; but very few are found above the cascades, while below the stream is well stocked to its junction with the Firehole.

No Loch-Leven trout have ever been found in the Madison (Firehole) above Keppler's Cascade, but the brook trout are very numerous there. Evidently, through some error, the fontinalis were planted there instead of the Loch Leven.

The brook trout in Gardiner River and in the West Fork (Glen Creek) have thriven and bred abundantly, especially in Willow Creek. These streams, however, being easily accessible from the wagon roads, and the brook trout taking the fly so eagerly, have been fished out to such an extent that in August last it was deemed advisable to prohibit fishing in them for a time. This was done, and the order has not yet been revoked; it probably may be revoked next season—for a part of the season at least.

The Von Behr trout in Nez Perce Creek have multiplied abundantly, and not only this stream, but the Firehole River, from the lower falls to Keppler's Cascade and Iron Creek, are abundantly stocked, as is also the Little Firehole below Mystic Falls. In the Firehole Basin is also found an occasional brook trout, evidently come down Keppler's Cascade, and a considerable number of the native mykiss. Several good specimens of rainbow trout have also been taken from the Little Firehole, near its mouth. I can not account for the presence of the rainbow in this locality, as it seems to me plainly impossible for any fish to ascend the lower falls of the Firehole.

I have never heard of any fish being taken from Shoshone or Lewis lakes. I have seen fishes of apparently 3 or 4 pounds' weight in Shoshone Lake, and a skeleton has been found on the shore of Shoshone Lake of a fish that probably weighed 10 pounds. Two soldiers of Troop D, Fourth Cavalry, reported having seen schools of trout 2 feet long near the mouth of De Lacey Creek in Shoshone Lake.

In 1893 brook trout were planted in Shoshone Creek, and these have thriven amazingly; the stream is now literally alive with trout from $1\frac{1}{2}$ pounds down.

In 1895, 500 black bass were planted in some small land-locked lakes in the Firehole Basin; nothing has been seen of them since, and I fear that all have perished.

In the Yellowstone and both forks of Snake River, with most of their tributaries, the native mykiss is indigenous and remarkably abundant. In the Madison River and its north fork, the mykiss, whitefish, and grayling are indigenous, and in the Firehole River, between its junction with the Gibbon and the lower falls, the mykiss, rainbow, Von Behr, fontinalis, grayling, and whitefish may be taken from the same pool.

I believe that bass would thrive in the small lake near the Gardiner River where ice is cut for the post; also in Moose and Loon lakes in the Falls River Meadows, and recommend that these lakes be stocked with bass. The former can be stocked at any time of year; the latter only in summer.

I hope that a hatchery will be established here, and some employee of the Government instructed in the artificial propagation of trout. A folding canvas boat is much needed for ascertaining the condition of plants made in several lakes remote from a wagon road.

BIRDS.

Pelicans, geese, ducks, gulls, and sandhill cranes are numerous. There are some swan. All of these birds nest here. Ospreys, hawks, and eagles are fairly numerous. There are a few sharp-tailed grouse, but in the main the altitude is too great for them. The big mountain grouse is fairly abundant all over the park, and broods of the ruffed grouse are found in many places. Sage grouse have been seen in the park, but are very uncommon. The jay family is represented by the magpie in some parts of the park, and by the Clarks crow, moose bird, and crested jay in all parts. The little water ouzel, a very curious and interesting bird, is fairly common, especially on the Gardiner and Gibbon rivers. Robins, kingfishers, and other small birds abound.

ANIMALS.

Buffalo.—But very few buffalo have been reported this season. The scouts, however, seldom see much sign in the summer, and now the few remaining buffalo are scattered and range in the most remote and inaccessible parts of the park in summer. I am confident of finding 25 this winter, when the snowshoe season sets in, and hope there are nearly double this number in the park. Since Idaho has forbidden the killing of buffalo—as has Montana and Wyoming—I have strong hopes of being able to protect them from further slaughter by poachers. Whether they will still decrease on account of natural causes only time can tell. A strong effort is being made to protect them and to save the remnant, if possible.

Moose.—Moose are becoming quite numerous in the south part of the park, and particularly in the southern forest reserve, where I believe there are more moose than in all the rest of the park. There are rumors of a band between Mammoth Hot Springs and Grand Canyon, but this rumor will not be verified before snow falls. I most earnestly recommend that Congress be urged to include the forest reserve in the park. This reserve is now under charge of the park management, with orders to protect the game therein. The only practical change which would take place in the status of this strip, were it included in the park proper, is that the law of May 7, 1894, would then apply to it, and poachers could be prosecuted and punished by law, whereas now it is only under executive orders.

Elk.—Notwithstanding the hard winter of 1896–97, which killed many elk and drove many more out of the park, there is no perceptible diminution in their number. I believe that more than 5,000 winter in the park, and that at least 15,000 leave the park in the autumn to winter in the lower country.

I happened to be at the south boundary of the forest reserve this year, just after the first snowstorm, on October 13 and 14. The country about Jackson Lake was literally alive with elk, and from the best estimates I believe that 10,000 crossed the south boundary this fall. Many go down the Madison to winter; some down the Gallatin, and some down the Yellowstone. All that survive the winter return to the park to raise their young, as soon as the snow will permit of their return. Of those that winter in the park, the largest herd ranges north of the Yellowstone River, in the country that it has been so often proposed to cut off from the park. I doubt if any more would ever winter in the park under any circumstances, if this should happen. The park furnishes an ideal summer range for 40,000 elk, but there is not enough winter range for one-fourth that number.

Sheep.—There are several bands of sheep that range along the higher mountains of the park. A very fine bunch winters close to the post, on the slopes of Mount Everts. This bunch numbered about thirty last winter. There are smaller bunches in the northeast corner of the park, some along the range between Swan Lake Flat and the Madison Basin, and a considerable number in that portion of the forest reserve east of the park. It is difficult to make an estimate of the total number in the park, because of the inaccessibility of their range, but I am confident of more than 100, and believe there are 200 in the park.

Deer.—Deer are numerous, and in the summer are distributed over the whole park. Their protection has as yet offered no difficulties and probably will not for many years to come. Probably 200 winter in the immediate vicinity of the post and are very tame. A few white-tail deer inhabit the lower and more open portions of the park.

Antelope.—Last winter drove many of the antelope out of the park, and of the number which left but few ever returned. A year ago there were probably 1,000 antelope in the park; now I doubt if there are half that number. Their winter range is at the base of Mount Everts, between the Yellowstone and Gardiner rivers. This range has become infested with coyotes, which kill many antelope and worry the rest of them, until I am satisfied that unless the coyotes can be driven away or killed the antelope will be driven from their winter range and will not return.

Bear.—The bear have increased and are quite numerous; the small black bears are very fearless. They frequent the garbage dumps at all the hotels and are objects of

much interest to tourists. If let alone they are quite harmless, and the enjoyment they afford tourists more than offsets the mischief they do.

Wolverine.—Wolverine, while not plentiful, are distributed over a large part of the park, though they are seldom seen by tourists.

Coyotes.—Coyotes are very numerous in certain sections. They do some damage to the waterfowl and kill some of the young elk, but the antelope is the greatest sufferer from their depredations. If a large number of coyotes could be gotten rid of, it would doubtless be a great benefit to the other game in the park.

There are some mountain lions, but these are rarely seen and do no material harm.

Fur-bearing animals.—The beaver are quite numerous in the park, and inhabit the following localities: Gardiner River, near the post, Lupine and Blacktail creeks, Elk Creek, the Lamar River, Slough Creek, Cache Creek, Soda Butte Creek, a few in Pelican Creek, the Upper Yellowstone, Thoroughfare Creek, a few in Barlow's Fork of Snake River, some in Falis River Meadows, a few about Shoshone Lake. There is a flourishing colony in Nez Perce Creek, a large one near the mouth of Magpie Creek, and a goodly number in the Gibbon River near Norris. There are some in Cascade Creek and in the lake, and all the creeks that drain into the Gardiner River above the falls. The lower beaver dam, opposite Obsidian Cliff, has been rebuilt. I think there are more beaver in the park now than at any time within the last six years, and if unmolested they will rapidly increase. Their protection, however, is one of the most difficult duties intrusted to the park management. They are now quite valuable and very easy to trap, and their skins are easily disposed of. The professional beaver trapper leaves almost no sign of his work, and it is very hard to catch him at his work.

Otter are fairly abundant and have increased since the barren streams have been stocked with fish.

Marten are plentiful and are widely distributed, as are the Canadian lynx and wild-cat.

Mink are quite plenty; foxes are plenty, and there are a goodly number of black and cross foxes. There are some badgers and many muskrats, ground hogs, squirrels, skunks, porcupines, and rabbits. Of the last we have the cottontails, a few jack rabbits, many snowshoe rabbits, besides the paca—tiny rock rabbits.

On the whole the park is a grand success as a game preserve. The variety of species is great and the condition of most of the species is satisfactory. The exceptions to this are, first, the buffalo, which are undoubtedly away from their natural range, the open plains; and next the antelope, which are suffering for lack of suitable winter range, and from the depredations of coyotes. The elk problem is not a serious one as yet, but it undoubtedly will be in a few years, unless more suitable territory is provided for winter range. This territory can now be acquired with little difficulty and at insignificant expense, and if it is acquired promptly there will always be elk hunting about the edges of the park. The longer the acquisition of this winter range is deferred the more difficult it will be, until perhaps a few generations hence the elk problem will become as difficult as is that of the buffalo now.

Respectfully submitted,

ELMER LINDSLEY,
Second Lieutenant, Fourth Cavalry.

The ACTING SUPERINTENDENT YELLOWSTONE NATIONAL PARK,

Fort Yellowstone, Wyo.

Mr. Lindsley has been charged, under my direction, with the duties of instructing the outposts and detachments in the work of protection, with regulating the movements of scouts, and making frequent inspections of all detached outposts, the manner in which patrol and scouting duty is performed—in brief, he is charged with the main duty of protecting the fish, game, and fur-bearing animals against poachers.

From my own personal observation and reports of scouts, I believe this report to be as accurate as can be made at this time. Later, when the conditions are favorable for traveling on skis, the number of buffalo and moose in the park may be closely verified, and, if materially different from the numbers in this report, it will be revised and amended accordingly.

On the morning of November 4 a large band of antelope from the slopes of Mount Everts drifted across the north boundary line of the park, between Gardiner and Electric Peak. They were fired into by lawless persons and 10 were killed. The band recrossed the line into the park. Later in the day Lieutenant Lindsley, with a detach-

ment of 20 men and 2 scouts, formed a long skirmish line and herded this band back to their winter range. The band numbered about 250.

Having obtained the names of the lawless persons who slaughtered the antelope, I have given instructions if found inside the boundary lines of the park they shall be arrested and ejected therefrom—not necessarily at the nearest point. One of the miscreants, John Dewing by name, was of the party which slaughtered so many antelope under similar conditions last winter.

The coyotes and the winter storms cause the antelope to drift down the valley of the Yellowstone and out of the park. Steps have been taken to diminish the number of coyotes.

An earthquake shock several seconds in duration was experienced at Mammoth Hot Springs at 2.30 o'clock a. m. on the 4th instant. It aroused the majority of the inhabitants from their slumbers, but caused no perceptible damage. It was not noticed at Yellowstone Lake, Fire-hole Basin, Grand Canyon, or Norris Basin.

RECOMMENDATIONS.

It is recommended that one additional troop of cavalry and one company of infantry be stationed at Fort Yellowstone for temporary duty during the tourist season, or in lieu thereof two companies of infantry.

That the forest reserve adjoining the park boundaries, set apart, reserved, and established as a public reservation by proclamation of the President, made on the 10th day of September, 1891; also, all that tract of land situate in the State of Wyoming, embraced within the following boundaries: Beginning at the intersection of parallel 44° north latitude with 110° west meridian, thence due south on said meridian to parallel 43° 30' north latitude, thence due west to the meridian of 110° 50', thence due north to its point of intersection with parallel 44° north latitude, thence due east on said parallel to the place of beginning; also, all that tract of land situate in the State of Wyoming, embraced within the following boundaries: Beginning at the southwest corner of the present Yellowstone National Park boundary, thence due south to parallel 44° north latitude, thence due east on said parallel to its point of intersection with the west boundary line of the State of Wyoming, be made part of the Yellowstone National Park, and that the boundaries of the Yellowstone National Park, as now fixed by law, be extended to include the same, and that the National Park protective act, approved May 7, 1894, section 1, be amended accordingly.

The altitude is too great for agriculture, and of the thousand elk estimated as slaughtered there annually, 75 per cent are taken by non-residents, for the heads and teeth.

Very respectfully,

S. B. M. YOUNG,
Colonel Third Cavalry, Acting Superintendent.

THE SECRETARY OF THE INTERIOR.

Inclosed herewith are copies of general and special instructions pertaining to outposts, and report pertaining to disbursements.

EXHIBIT 1.

OFFICE OF SUPERINTENDENT YELLOWSTONE NATIONAL PARK,
Fort Yellowstone, Wyo., November 1, 1897.

Lieutenant Lindsley, Fourth Cavalry, under the special directions of the acting superintendent, is charged with the important work of protecting the game, fur-bearing, and feathered animals of the park.

The following instructions will govern at the respective stations designated. Lieutenant Lindsley will give any additional instructions, from time to time, as may be found necessary.

GENERAL INSTRUCTIONS.

The operations of detachments will be confined to park limits, except in emergencies, which will be reported in detail, with reasons for leaving the park.

The principal duty of the stations in winter is to protect the birds and animals in the park. To this end each noncommissioned officer in charge of a station should, as rapidly as possible, familiarize himself thoroughly with the country included in his district, and should learn by observation the haunts and habits of fishes, birds, and animals in his district, and for whose preservation he is held responsible.

A record of each day's happenings, with number of miles traveled, destination, object of the trip, number of men, and kind of transportation (whether on foot, on horseback, or on skis), will be kept. The number and kind of game seen, its condition, the game signs seen, and the temperature and condition of weather will also be recorded. A copy of this record will be made out at the close of each month and forwarded to headquarters by first opportunity. This monthly report will also include a summary of the different kinds of game in the district, their range, condition, and an estimate of their number. The soldier in charge of a scouting party or patrol will carry a blank book, furnished for that purpose, in which he will record minutely the details of each day's trip, camping places, length of march and time consumed in marching, weather, game and game signs observed, and all circumstances of the trip. Upon returning to the station this record will be copied in the station record book and also copied on the monthly report.

No trip will be made on snowshoes by one man alone.

An abundant supply of park regulations will be furnished from headquarters, and the noncommissioned officer will see that a sufficient number of them is posted within the limits of his district. All violations of these regulations will be prevented.

It is of great importance that tourists shall be treated with fairness.

The special instructions from this office regarding the carrying, sealing, and inspection of firearms will be complied with. No one will be allowed to remain about stations, except members of this command. To prevent suffering, however, shelter may be granted in cases of necessity. As soon as the necessity is over the parties must be required to leave.

When the weather permits a trip of some kind should be made daily.

As neither the game nor the poachers travel by the wagon roads, these roads should be avoided as much as possible by patrols and scouting parties.

Visits to any particular locality should be made at irregular intervals and always by a different route, if possible. In this way all of the country will be learned in time.

Especial attention will be given to the prevention and extinction of forest fires.

All persons traveling through the park from October 1 to June 1 should be regarded with suspicion. They will be closely questioned and carefully inspected, and, if necessary, will be watched from station to station.

People arrested will be sent immediately to the Mammoth Hot Springs, with the necessary witnesses in their case. They will be compelled to make such marches as the guard thinks proper, but will not be compelled to go more than a reasonable distance, their transportation being considered.

Great care must be taken that fire does not destroy any of the station buildings; candles, except in lanterns, will not be taken into the stable, nor will matches be lighted there.

Grain and hay will be frequently inspected to prevent waste or injury. Cleanliness of building and person will be required at all times; should vermin be found, every possible effort must be made to exterminate them.

All persons are enjoined to use the rations in the snowshoe cabins only in cases of necessity; never under any circumstances to waste any of them, and to always leave the cabins and their contents secure and in good condition. The ax and shovel must be left inside, the comfortables hanged up, the cooking utensils left clean and dry and the food in its box secure from mice, etc. Enough dry wood for one night should always be left in the cabin.

The noncommissioned officer will be held strictly responsible for everything pertaining to the station, and when relieved will turn over to his successor all the records, instructions, and public property in his possession, taking receipt therefor in duplicate. This receipt will show the number or quantity and condition of articles, and one copy will be at once transmitted to the post quartermaster.

SPECIAL INSTRUCTIONS.

Soda Butte Station.—The region to be covered by men from this station will be bounded on the west by the Yellowstone River and on the south by Broad Creek and the divide between Lamar River and Pelican Creek.

Particular attention will be paid to the prevention of poaching near the park boundaries, especially on upper Slough Creek.

In times of high water the bridge over Lainar River near the station will be frequently visited, and destruction of it prevented if possible.

A register of all parties passing the station will be kept, and a transcript of it will accompany each monthly report.

Nearly all the streams in this district contain beaver, which must be carefully watched and specially mentioned in each report. Buffalo may be found in almost any portion of the district, and the buffalo signs observed will also be noted in each report. The buffalo must not be pursued nor frightened. Attention will also be given to the preventing of the killing of elk on the north and east boundaries of the park and the forest reserve.

Riverside.—The district to be covered by men from this station extends from the head of Bechler River to Mount Holmes, over the Madison Plateau and up the Madison River as far as the mouth of Gibbon River, but not over in the valley of the Firehole, and including all the country north of the station which drains into the Madison.

Particular attention will be given to the prevention of poaching, special attention being given to the foothills around the basin in the fall and spring and to the prevention of the capture of live animals in the winter and early spring. Fur poachers must be closely watched for in the whole district, especially along all streams. The whole district must be frequently patrolled in winter to detect the trail of parties who may have entered on skis to poach in other districts.

The printed instructions in regard to the bridge near the station will be carefully obeyed.

Patrols may be sent to the Fountain or to Norris once in ten days for mail.

A register of all parties passing the station will be kept, and a transcript of it will accompany each monthly report.

Snake River.—The district to be covered by men from this station will include all of the country south of a line drawn from Madison Lake to Shoshone Geyser Basin along the south shore of the lake to the outlet, thence to the Thumb, thence along the lake shore to the mouth of Beaverdam Creek, thence east to the east boundary of the park, and south as far as the southern boundary of the forest reserve.

Particular attention will be given to the prevention of poaching near the forest reserve boundary in the valley of the Upper Yellowstone and the Falls River Basin.

Special attention will be given to the preservation of the buffalo on the west side, and to the moose, elk, and fur on the southwest corner of the forest reserve. The buffalo must not be pursued and care must be taken not to approach near enough to frighten them from their winter range.

Printed instructions in regard to the bridge over Snake River will be carefully obeyed.

As this district is far removed from stations of any considerable bodies of troops, especial attention will be given to the prevention of forest fires.

A register of all parties passing the station will be kept, and a transcript of it will accompany each monthly report.

In each monthly report special mention will be made of buffalo, moose, and beaver in the district.

Norris.—The district to be covered by men from this station will be bounded by a line from Apollinaris Spring to Mount Holmes, thence south along the divide to the Madison Canyon, along the Gibbon River to the falls, thence northeast to the Canyon Hotel, thence northwest to Apollinaris Spring, including all that country that drains into the Gibbon.

During the summer patrols will be made each day to connect with similar patrols from the Canyon and the Lower Basin, for the prevention of forest fires and violation of park regulations.

The Norris Geyser Basin will be watched, and all irregularities in the vicinity of the station prevented.

If mail is not otherwise received, a patrol may be sent to the post for it each ten days.

When arrests are made the facts will be reported to headquarters at once by wire.

The beaver in Winter, Straight, Obsidian, Solfatara, and Cascade creeks and in the Gibbon River must be carefully guarded. Report any moose or sheep sign at once by telephone. Patrol carefully for bear trappers in the whole district.

Mud Geyser Station.—The district to be covered by men from this station will include that country on the east of the Yellowstone River between Broad Creek and Beaverdam Creek, and limited by the mountains east of the Park and the Divide, between Pelican Creek and the Lamar River. It also includes the Hayden Valley and the country south as far as the Thumb.

Particular attention will be given to the prevention of poaching.

In summer this station will be moved to the regular camping place near the Lake

Hotel, when its duties will consist mostly in the regulation of camping parties and the prevention of forest fires. For this purpose daily patrols will be made over the roads toward the Canyon and toward the Thumb.

During the winter, if mail is not otherwise received, patrols may be sent every ten days to Norris.

Except in urgent cases members of this station will not be permitted to incur bills at either the Lake or Canyon hotels; such cases will be immediately reported, and cause therefor, by wire.

A special report will be made in regard to buffalo or buffalo signs seen in the district, and great care will be exercised not to pursue or frighten the buffalo on their winter range.

The number and location of fur-bearing animals—especially beaver—will be mentioned in each report.

Lower Basin.—The Lower Basin Station will be established when the troops from that camp return to the post.

The ground to be covered by it will be the valley of the Firehole River from its source to the Gibbon, and the valley of the Nez Perce Creek and its tributaries; also the valley of the Gibbon below the falls, and the country drained by Shoshone and Heron (De Lacey) creeks and northeast to the Thumb.

The bear parks and valley of the Little Firehole will also be included in this district. The beaver and all other fur-bearing animals will be carefully protected, and any buffalo sign reported at once by wire.

Particular attention will be given to prevent any access to the buffalo herd by poachers coming over from the west.

Frequent reports will be made by telephone of the condition of affairs about the station.

If mail is not otherwise received, a patrol may be sent to Norris for it each ten days.

After the hotels close especial watch will be kept of all parties entering the district with teams or pack trains, and any parties who interfere with supplies of hay and grain belonging to either hotel or transportation companies will be promptly arrested and returned to headquarters for trial.

S. B. M. YOUNG,
Colonel Third Cavalry, Acting Superintendent.

EXHIBIT 2.

OFFICE OF DISBURSING QUARTERMASTER,
IMPROVEMENT OF YELLOWSTONE NATIONAL PARK,
Mammoth Hot Springs, Wyo., October 25, 1897.

SIR: I have the honor to submit herewith a statement of the cost of work in the Yellowstone National Park under the appropriation for the "Improvement and protection" of the same during the season of 1897:

UNDER CONTRACT FOR GRUBBING AND CLEARING FOR ROADS.

Riverside to west boundary	\$787.50
Elk Park to Gibbon Meadows.....	180.50
Soda Butte toward east boundary.....	1,066.00
	<hr/> \$2,034.00

SURVEYING.

Determining exact location of portions of south boundary:

Labor	1,440.49
Saddle horses and pack train.....	570.24
Rations, material, tools, etc.....	366.54
Office and transportation.....	201.07
	<hr/> 2,578.34

Locating new road from Riverside to west boundary:

Labor	60.00
Team hire	18.40
Rations, tools, etc.....	14.32
Office and transportation.....	7.84
	<hr/> 100.56

Locating new road from Elk Park to Gibbon Meadows:		
Labor	\$15.00	
Team hire.....	4.60	
Rations, tools, etc.....	2.60	
Office and transportation.....	1.96	
		\$24.16
Relocating portion of road to east boundary near Soda Butte:		
Labor	121.66	
Team hire.....	32.20	
Rations, tools, etc.....	28.00	
Office and transportation.....	15.38	
		197.24
Preliminary survey for proposed road to Golden Gate:		
Labor	28.71	
Horse hire	2.88	
Rations, tools, etc.....	4.08	
Office and transportation.....	3.15	
		38.82
Viewing location for proposed road over Mount Washburn:		
Traveling expenses	38.39	
Office and transportation.....	3.84	
		42.23
Determining altitudes and marking same on mileposts, Norris to West Thumb, via Fountain and Upper Basin:		
Labor	94.31	
Team hire	26.04	
Rations, tools, etc	16.50	
Office and transportation.....	9.43	
		146.28
Locating portion of north boundary and setting posts on same:		
Labor	545.03	
Team hire	108.52	
Rations, tools, etc	148.64	
Office and transportation.....	75.35	
		877.54
CONSTRUCTION.		
Three miles road, Riverside to west boundary:		
Labor	500.62	
Team hire	434.34	
Rations, tools, etc	186.00	
Office and transportation	102.64	
		1,224.20
Ornamental space at Mammoth Hot Springs, one-fifth mile of roadway, and water trough for carrying water to same:		
Labor	187.70	
Team hire	86.05	
Rations, tools, etc	52.50	
Surveying, and office and transportation	23.37	
		349.62
New approach to Grand Canyon Hotel and railings at dangerous points along Grand Canyon:		
Labor	216.09	
Team hire	50.71	
Rations, tools, etc	44.00	
Office and transportation	19.68	
		330.48
New road to east boundary (Cook City road), from new bridge toward head of canyon, $2\frac{1}{2}$ miles:		
Labor	1,556.64	
Team hire	1,075.75	
Rations, tools, etc	642.24	
Office and transportation	243.23	
		3,517.86
Rockwork at head of canyon, $1\frac{1}{2}$ miles:		
Labor	3,533.61	
Team hire	306.54	
Rations, tools, etc	886.40	
Office and transportation	361.01	
		5,087.56

One-half mile of road from White Pyramid to Black Sand Basin
 at Upper Basin:

Labor	\$30.40
Team hire	13.80
Rations, tools, etc.....	7.48
Office and transportation.....	4.52

	\$56.20

Grading on 1-mile road, Canyon to Lake:

Labor	62.00
Team hire	30.00
Rations, tools, etc.....	15.00
Office and transportation.....	6.00

	113.00

SAWMILL.

Labor	1,177.25
Team hire	346.76
Rations, tools, etc.....	354.90
Office and transportation.....	142.40

	2,021.31

Sawed:

Lumber	210,084
Squared logs.....	25,200
Cedar posts.....	12,000

	247,284

At \$8.18 per M..... 2,020.50

Hauling lumber for storage at Mammoth Hot Springs from mill:

Team hire	290.00
Rations, tools, etc.....	58.00
Office and transportation.....	29.00

	377.00

BRIDGES.

Building bridge over Gibbon River in Virginia Meadows:

Labor	19.50
Team hire	7.95
Rations, tools, etc.....	7.00
Office and transportation.....	2.74

	37.19

Bridge over Trout Creek between Grand Canyon and Lake:

Labor	55.00
Team hire	21.24
Rations, tools, etc.....	15.68
Office and transportation.....	8.62

	100.54

Bridge over Firehole River near Riverside Geyser:

Labor	148.00
Team hire	72.00
Rations, tools, etc.....	48.20
Office and transportation.....	21.00

	289.20

Bridge over Gardiner River on road to East Boundary:

Labor	236.50
Team Hire.....	21.92
Hauling lumber.....	103.00
Rations, tools, etc	175.72
Office and transportation.....	36.14

	573.28

Footbridge over Firehole River at Biscuit Basin:

Labor	9.00
Team hire	3.95
Rations, tools, etc.....	4.36
Office and transportation.....	1.29

	18.60

REPAIRS.

Opening roads at commencement of season:	
Labor	\$190.50
Team hire.....	72.33
Rations, tools, etc.....	52.56
Office and transportation.....	26.28
	\$341.67
Repairs, Gardiner to Golden Gate:	
Labor	902.00
Team hire.....	384.33
Rations, tools, etc.....	281.50
Office and transportation.....	154.83
	1,722.66
Golden Gate to Yellowstone Lake, via Grand Canyon:	
Labor	2,195.50
Team hire.....	951.17
Rations, tools, etc.....	629.12
Office and transportation.....	314.66
	4,090.45
Norris to Upper Basin, via Fountain:	
Labor	1,600.62
Team hire.....	876.75
Rations, tools, etc.....	495.40
Office and transportation.....	247.69
	3,220.46
Upper Basin to Yellowstone Lake, via West Thumb, including new small bridge near West Thumb:	
Labor	233.25
Team hire.....	124.12
Rations, tools, etc.....	75.12
Office and transportation.....	35.73
	468.22
Repairing bridge over Firehole River near camp of Troop D:	
Labor	70.00
Team hire.....	40.00
Rations, tools, etc.....	38.00
Office and transportation.....	11.00
	159.00
Repairing trestle at Golden Gate:	
Labor	13.50
Team hire.....	7.90
Rations, tools, etc.....	12.00
Office and transportation.....	2.15
	35.55
Repairing all bridges and culverts, between Mammoth Hot Springs and Norris, including new bridge over Green Creek and redecking Indian Creek bridge:	
Labor	105.00
Team hire.....	48.72
Rations, tools, etc.....	38.00
Office and transportation.....	15.37
	207.09
Steamboat:	
Labor	367.50
Team hire	47.40
Rations, tool, etc.....	102.44
Office and transportation	41.49
	558.83
Grand total.....	
	30,939.14

Respectfully submitted.

J. W. POPE,

Major and Quartermaster, U. S. A., Disbursing Officer.

ACTING SUPT. YELLOWSTONE NATIONAL PARK,

Mammoth Hot Springs, Wyo.

YELLOWSTONE NATIONAL PARK AND FOREST RESERVE
FROM MAPS BY THE U.S. GEOLOGICAL SURVEY



Roads and Trails are indicated as follows:

Roads completed ———
Roads projected ——

Roads under construction ————
Roads available but not now used
by Park Transportation Company ————

Trails
Old wagon trails that might be
used for saddle trails —————

Scales: 1 mile
Contour Interval 100 feet



